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EXAMINER	
SAJOUS, WESNER	

ART UNIT	PAPER NUMBER
2676	6

DATE MAILED: 10/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/851,701	HOPPE ET AL.	
	Examiner	Art Unit	
	Wesner Sajous	2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 July 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-74* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-50 and 52-74* is/are rejected.

7)☒ Claim(s) *51* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. This Office Action is in response to the amendments and response dated July 24, 2003. Claims 1-74 are presented for examination.

Response to Amendment/Arguments

2. In response to Applicant's arguments contending that Landeau only discloses creating anti-aliasing polygonal primitives, not lines; and that Landeau fails to disclose "overdrawing discontinuity edges as antialiased lines" as recited in claim 1, the Examiner respectfully disagrees. It is noted that since in Landeau a polygonal primitives is created for anti-aliasing (see abstract), lines are also created because a polygon is known in the art to comprise closed line segments. In conventional art, a complete creation of all the edges or lines of a primitive defines a polygon object. In Landeau, portion of the image object is rendered for anti-aliasing, and the primitives are noted to be composed of silhouette edges. The silhouette edges of the objects are rendered to perform anti-aliasing. See col. 2, lines 36-52. And, Landeau at fig. 2 illustrates the processing of a line segment for reducing aliasing effect in an object image. Thus, the silhouette edges in Landeau are construed to represent the anti-aliased lines, as claimed. In addition, since in Landeau edges must be drawn many times by the primitive pipeline to determine silhouette edges that are ainti-aliased (see col. 2, lines 45-67, it is contemplated that overdrawing of discontinuity edges are performed as anti-aliased lines. For this process involves the overdrawing of

discontinuity or zigzag edges in line (s) for anti-aliasing. Thus, the Applicant's arguments are not deemed persuasive. The rejection is sustained.

The Applicant, at page 18, paragraphs 3-4 of the response, appears to be making a case of why he believes that Landeau fails to teach the "overdrawing" step by pointing out to specific portions of the specification that defines the step. It is noted that the sections and features upon which the Applicant relies are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Hence, Applicant's arguments are not deemed persuasive.

Claims 2-4, and 6-11 recite the features of claim 1, by dependence, the rationale above also applies for claims 2-4 and 6-11.

Independent claims 12, 43, 53, 63, 69, 74 and their dependents also somehow recite the "overdrawing [the discontinuity edges]" or "silhouette edges [as polygonal meshes] as antialiased lines", they too fall under the same rationale set forth above for claim 1. Accordingly, the rejections set forth in the previous OA are sustained.

Regarding the 35 U.S.C.103 rejections with respect to claims 5, 14, 21-42, 48-50, 52, 65, 67, and 70, it is noted that since these claimed subject matters and those of the instant application were commonly owned at the time of the invention, Landeau is not qualified as section 103 prior art. Thus, the rejections are withdrawn.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1-4, 6-13, 15-20, 43-47, 5-64, 66, 68-69, and 71-74 are rejected under 35 U.S.C. 102(e) as being anticipated by Landau et al. (Pat. No. 6115050).

Considering claim 1, Landau discloses a method comprising rendering (as performed by item 166 of fig. 12) a polygon mesh to produce a computer-generated image (as performed by item 164 of fig. 12. The Applicant is directed to fig. 1 for an example of a computer generated image produced of polygon meshes. See also figs. 1 or fig. 4 or fig. 6 or figs. 8-9 for the polygonal mesh). Landau, discloses an image exhibiting aliasing at its discontinuity edges (e.g., aliasing effects at image areas representing silhouette edges, see abstract, and also fig. 2, i.e., the "staircase" image as characterization of image exhibiting aliasing at its discontinuity edges). In addition,

Landau discloses overdrawing the discontinuity edges as antialiased lines to reduce the aliasing (e.g., applying an anitaliased scheme to the areas of the image representing silhouette edges. See abstract lines 1-6, wherein the silhouette edges of the object being antialiased corresponding to the antialiased lines—see fig. 14. See, further, col. 2, lines 45-61 as characteristic for the overdrawing edges.)

Re claim 2, Landau discloses polygon mesh comprises a set of triangles (as characterized by fig. 1).

As per claim 3, the claimed "image is stored in memory after rendering, and the overdrawing comprises rendering the discontinuity edges as antialiased lines in the memory... edges" is met by fig. 12, item 170.

In claim 4, the claimed "identifying the discontinuity edges as a collection of silhouettes and sharp edges" is inherently met by the abstract, at lines 1-6, wherein the sharp edges correspond to the aliasing effects shown at the silhouettes edges of the objects, and/or the zigzag representation or staircase effect illustrated at fig. 2. Hence, the discontinuity edges are a combination of the silhouettes and the sharp edges.

As per claims 6, 7 and 9, the claimed "shading discontinuity edges and blending selected discontinuity edges; and asymmetrically blending selected discontinuity edges" is inherently performed by the system of Landau, because in order for Landau to perform antialiasing to smooth the jaggy edges of the image, the edge portions of the image where aliasing is present has to be blended with image edges into the background color of the image is being rendered on. Consequently, pixels at the edges

of the aliased line are shaded. The inherent blending of discontinuity edges is asymmetric because not all section of the image edges is processed for anti-aliasing.

Re claim 8, the claimed "orienting the discontinuity edges in a consistent manner" is inherently met by the disclosure at col. 6, lines 5-40, for the triangle strip processing referred to at the cited disclosure characterizes the discontinuity edges.

As per claim 10, the claimed "sorting the discontinuity edges prior to said overdrawing" is inherently performed by the polygon rendering 166 of fig. 12, because the overdrawing or redrawn over of certain edges does not performed until the rendered image is stored in memory 170 of fig. 12. Note that the "compile object model 114" including the "edge index " under the control of processor 168 characterizes the edge overdrawing functions.

Claim 11 is a computer-readable media comprising computer-executable instructions performing the method of claim 1, and is similarly rejected. See col. 1, lines 4-6.

The invention of claim 12 recites features equivalent to and performing the method of claim 1, it is, therefore similarly rejected.

Claim 13 recites the features of claim 4, it is similarly rejected.

Claims 15-20 recites the cited features of claims 6-11, they are, therefore rejected under the same rationale as claims 6-11.

Regarding claim 43, Landau discloses rendering a polygonal mesh (as performed by item 166 of fig. 12, see figs. 1 or fig. 4 or fig. 6 or figs. 8-9 for the polygonal mesh); identifying silhouette edges of the polygon mesh for a given viewpoint

(see col. 2, lines 55-61 and col. 11, lines 40-45. It is noted that in computer graphics rendering, the silhouette edges can be identified based on the perimeter of a polygon object). And, Landau discloses overdrawing the discontinuity edges as antialiased lines (e.g., applying an anitaliased scheme to the areas of the image representing silhouette edges. See abstract lines 1-6, wherein the silhouette edges of the object being antialiased corresponding to the antialiased lines—see fig. 14. See, further, col. 2, lines 45-61 as characteristic for the overdrawing edges.)

Considering claim 44, Landau discloses constructing a data structure (e.g., object models 102 and/or compiled object models 114 of fig. 10) prior to rendering a polygon mesh (see fig. 12, items 162 and 166, see col. 7, lines 15-20); and finding silhouette edges in the polygon mesh during runtime using the data structure (as performed by item 112 of fig. 10, see col. 7, lines 21-25); and storing the edges in an output list (114 of fig. 10). The Applicant should note that the class border edges are silhouette edges, and the triangle strips including the associated vertices that correspond to the polygon mesh. See col. 6, lines 30-35.)

Claim 45 is rejected for the same reason as claim 6.

Claim 46 is rejected for reason similar to claim 10.

Claim 47 is rejected for reason similar to claim 43.

Considering claim 53, Landau discloses a memory (170, fig. 12) to store polygon mesh; and a processing unit (166 and 168 of fig. 12) to render the polygon mesh, the processing unit (166 and 168 of fig. 12) being configured to overdraw discontinuity edges as antialiased lines to reduce the aliasing (e.g., applying an anitaliased scheme

to the areas of the image representing silhouette edges. See abstract lines 1-6, wherein the silhouette edges of the object being antialiased corresponding to the antialiased lines—see fig. 14. See, further, col. 2, lines 45-61 as characteristic for the overdrawing edges.)

Claim 54 is rejected for the same reason as claim 2.

Claim 55 is rejected for the same reasons as claim 4.

Re claim 56, Landau discloses a processing unit (166, 168, fig. 12) configured to detect discontinuity edges (e.g., silhouette edges, see col. 2, lines 50-65); and a graphics-processing unit (166) configured to render the polygon mesh and to overdraw the discontinuity edges.

Re claim 57, the claimed "frame buffer to store the rendered mesh" (is characterized by the function of item 170 of fig. 12); and the claimed "render the discontinuity edges as antialiased lines in the frame buffer" is inherently performed by item 166 of fig. 12.

Claims 58-62 recite the features of claims 6-10, respectively, they are, therefore, rejected for the same reasons as claims 6-10.

Considering claim 63, Landau discloses a graphics processing system (see fig. 12) comprising a renderer (166 of fig. 2) a polygon mesh (see figs. 1 or fig. 4 or fig. 6 or figs. 8-9 for the polygonal mesh); a discontinuity edge detector (162 of fig. 12) configured to detect edge in the polygon mesh (see col. 2, lines 40-42, and col. 11, lines 40-50, wherein the determined silhouette edges correspond to the detected discontinuity edges); an overdrawer configured to overdraw the discontinuity edges as

antialiased lines to reduce the aliasing (e.g., applying an anitaliased scheme to the areas of the image representing silhouette edges. See abstract lines 1-6, wherein the silhouette edges of the object being antialiased corresponding to the antialiased lines—see fig. 14. See, further, col. 2, lines 45-61 as characteristic for the overdrawing edges.)

Re claim 64, Landau discloses a data structure (162, fig. 12); and the discontinuity edge detector (162 of fig. 12) configured to detect edge in the polygon mesh (see col. 2, lines 40-42, and col. 11, lines 40-50, wherein the determined silhouette edges correspond to the detected discontinuity edges).

Claim 66 is rejected for reason similar to claim 49.

Claim 68 is rejected for reason similar to claim 47.

Claim 69 is a computer-readable media with program instructions performing the method of claim 63, it is, therefore, rejected under the same rationale as claim 63.

Claim 71 is rejected for reason similar to claim 6.

Claim 73 is a computer-readable media with computer-executable instructions performing the combined methods of claims 7 and 8.

Considering claim 74, Landau discloses a graphics processing system (see fig. 12) comprising means (162, fig. 12) for identifying sharp edges in a polygon mesh (wherein the sharp edges correspond to the aliasing effects shown at the silhouettes edges of the objects, and/or the zigzag representation or staircase effect illustrated at fig. 2, see abstract); means for rendering (166 of fig. 2) the polygon mesh (see figs. 1 or fig. 4 or fig. 6 or figs. 8-9 for the polygonal mesh); means for identifying silhouette edges

that occur from at least one viewpoint of the rendered image (col. 11, lines 40-45); means (166, fig. 12) for shading the discontinuity edge (see col. 9, lines 30-40); means (112, and 114 of fig. 10) for sorting the discontinuity edges; and means for overdrawing the discontinuity edges as antialiased lines (e.g., applying an anitaliased scheme to the areas of the image representing silhouette edges. See abstract lines 1-6, wherein the silhouette edges of the object being antialiased corresponding to the antialiased lines—see fig. 14. See, further, col. 2, lines 45-61 as characteristic for the overdrawing edges.)

6. Claims 1-50, 52-74 are rejected under 35 U.S.C. 102(e) as being anticipated by Gossett et al. (Pat. No. 6115050).

Considering claim 1, Gossett discloses a method comprising rendering a polygon mesh to produce a computer-generated image (see fig. 1), the image exhibiting aliasing at its discontinuity edges (*note that since the image of fig. 1 is alleviated by supersampling, see fig. 2, it is exhibiting aliasing at its edges*). In addition, Gossett discloses overdrawing the discontinuity edges as antialiased lines to reduce the aliasing (e.g., as performed by fig. 10, steps 1010-1011, wherein the silhouette edges (808 and 809) of the object that are antialiased (see fig. 8, and col. 9, lines 14-20) corresponding with the antialiased lines).

Re claim 2, Gossett discloses polygon mesh comprises a set of triangles (as characterized by fig. 8).

As per claim 3, the claimed "image is stored in memory after rendering, and the overdrawing comprises rendering the discontinuity edges as antialiased lines in the memory... edges" is met by fig. 5, item 502.

In claim 4, the claimed "identifying the discontinuity edges as a collection of silhouettes and sharp edges" is inherently performed in Gossett since aliasing effect in a polygon line to be antialiased portrays a zigzag representation of the lines. These zigzag representation corresponds with the sharp edges. The antialiased lines by itself are composed of silhouette edges. Hence, the discontinuity edges are a combination of the silhouettes and the sharp edges that formed the antialiased image.

Re claim 5, the claimed "identifying sharp edges prior to a rendering; and finding silhouette edges during runtime, the discontinuity edges being a union of the sharp edges and the silhouette edges" is inherently met by the teaching of Gossett, because in order to render the polygon without aliasing effects, zigzag edges along the polygon's line must first be detected before the rendering step is processed. It is noted that the sharp edges correspond to the aliasing effects shown at the silhouettes edges of the objects, and/or the zigzag representation, which too also defines the discontinuity edges.

As per claims 6, 7 and 9, the claimed "shading discontinuity edges and blending selected discontinuity edges; and asymmetrically blending selected discontinuity edges" is inherently performed by the system of Gossett, because in order for Gossett to perform antialiasing to smooth the jaggy edges of the image, the edge portions of the image where aliasing is present has to be blended (using blend unit 406, fig. 4) with

image edges into the background color that the image is being rendered on. Consequently, pixels at the edges of the aliased line are shaded. The inherent blending of discontinuity edges is asymmetric because not all section of the image edges is processed for anti-aliasing. See col. 5, line 14 to col. 6, line 65.

Re claim 8, the claimed "orienting the discontinuity edges in a consistent manner" is inherently met by the disclosure at col. 5, 14-45.

As per claim 10, the claimed "sorting the discontinuity edges prior to said overdrawing" is inherently met by the method performed in fig. 7, since the sorted pixels are associated with the discontinuity edges.

Claim 11 is a computer-readable media comprising computer-executable instructions performing the method of claim 1, and is similarly rejected. See col. 1, lines 4-6.

The invention of claim 12 recites features equivalent to and performing the method of claim 1, it is, therefore similarly rejected.

Claim 13 recites the features of claim 4, it is similarly rejected.

Claim 14 contains limitations that are analogous to the limitations of claim 5. This being the case, the limitations of claim 14 are rejected under the same rationale as claim 5.

Claims 15-20 recites the cited features of claims 6-11, they are, therefore rejected under the same rationale as claims 6-11.

Re claim 28, Gossett discloses inherently discloses the step of identifying sharp edges prior to a rendering (as performed by item 404 of fig. 4); constructing a data

structure prior to rendering a polygon (as inherently met by item 402 of fig. 4); finding silhouette edges during runtime using the data structure (as met by item 404 of fig. 4) and collecting the sharp edges and the silhouette edges in a list (502, fig. 5) to form discontinuity edges. The Applicant should note that the sharp edges correspond to the aliasing effects shown at the silhouettes edges of the objects, and/or the zigzag representation, which too also defines the discontinuity edges. And, since the steps are processed before the antialiased image is presented to video display 412 for review, the aforementioned steps must be performed prior or during processing time.

Claim 29 is rejected for the same reason as claim 6.

Claim 30 is rejected for the same reason as claim 7.

Claim 40 is rejected for the same reason as claim 9.

Claim 31 is rejected for the same reason as claim 8.

Claim 32 is rejected for the same reason as claim 11.

Claim 33 is rejected for the same reasons as claim 28.

Re claims 34 and 36-37, Gossett discloses rendering a polygonal mesh (as depicted in fig. 1 or fig. 8); determining discontinuity edges of the polygon (as depicted in fig. 2; *note that since the image of fig. 1 is alleviated by supersampling, see fig. 2, it is exhibiting aliasing at its edges);* sorting the discontinuity edges according to visibility (as inherently met by the method performed in view fig. 7, item 708 and fig. 9, since the sorted pixels are associated with the discontinuity edges); and overdrawing the discontinuity edges as antialiased lines in an order resulting from the sorting (e.g., as performed by steps 710 and 712 of fig. 7 in view of steps 1010-1011 of fig. 10, wherein

the silhouette edges (808 and 809) of the object that are antialiased (see fig. 8, and col. 9, lines 14-20) corresponding with the antialiased lines).

Claim 35 is rejected for the same reasons as claim 5.

Claim 38 is rejected for the same reason as claim 6.

Claim 39 is rejected for the same reason as claim 7.

Claim 40 is rejected for the same reason as claim 9.

Claim 41 is rejected for the same reason as claim 8.

Claim 42 is rejected for the same reason as claim 11.

Regarding claim 43, Landau discloses rendering a polygonal mesh (see fig. 1); identifying silhouette edges of the polygon mesh for a given viewpoint (see fig. 9). And, Gossett discloses overdrawing the discontinuity edges as antialiased lines (.g., as performed by fig. 10, steps 1010-1011, wherein the silhouette edges (808 and 809) of the object that are antialiased (see fig. 8, and col. 9, lines 14-20) corresponding with the antialiased lines).

Considering claim 44, Gossett discloses constructing a data structure (see fig. 4, item 402); and finding silhouette edges in the polygon mesh during runtime using the data structure (see col. 5, line 14 to col. 10, line 50); and storing the edges in an output list (412, fig. 4).

Claim 45 is rejected for the same reason as claim 6.

Claim 46 is rejected for reason similar to claim 10.

Claim 47 is rejected for reason similar to claim 43.

Considering claim 53, Gossett discloses a memory (502, fig. 5) to store polygon mesh; and a processing unit (402, fig. 4) to render the polygon meshes, the processing unit (402, fig. 4, and/or items 100, and 1011 of fig. 10) being configured to overdraw discontinuity edges as antialiased lines to reduce the aliasing.

Claim 54 is rejected for the same reason as claim 2.

Claim 55 is rejected for the same reasons as claim 4.

Re claim 56, Gossett discloses a processing unit (402, fig. 4) configured to detect discontinuity edges (e.g., silhouette edges); and a graphics-processing unit (402/404, fig. 4) configured to render the polygon mesh and to overdraw the discontinuity edges.

Re claim 57, the claimed "frame buffer to store the rendered mesh" (is met by fig. 5, item 502); and the claimed "render the discontinuity edges as antialiased lines in the frame buffer" is inherently performed by item 402 of fig. 4.

Claims 58-62 recite the features of claims 6-10, respectively, they are, therefore, rejected for the same reasons as claims 6-10.

Claim 63 contains features that are analogous to the features recited in claim 1. This being the case, the limitations of claim 63 are rejected under the same rationale as claim 1.

Re claim 64, Landau discloses a data structure (402, fig. 4); and the discontinuity edge detector (402/404 fig. 4) configured to detect edge in the polygon mesh (see also fig. 10).

Claim 66 is rejected for reason similar to claim 49.

Re claim 67, the claimed "shading module to shade the discontinuity edges using asymmetric blending" is met by fig. 4, item 406.

Claim 68 is rejected for reason similar to claim 47.

Claim 69 is a computer-readable media with program instructions performing the method of claim 63, it is, therefore, rejected under the same rationale as claim 63.

Claim 70 recites the features of claim 5, it is therefore, similarly rejected.

Claim 71 is rejected for reason similar to claim 6.

Claim 73 is a computer-readable media with computer-executable instructions performing the combined methods of claims 7 and 8.

Considering claim 74,Gossett discloses a system comprising means (404, fig. 12) for identifying sharp edges in a polygon mesh (wherein the sharp edges correspond to the aliasing effects shown at the silhouettes edges of the objects, and/or the zigzag representation); means for rendering (412 of fig. 4) the polygon mesh; means for identifying silhouette edges that occur from at least one viewpoint of the rendered image (see fig. 9, and 10); means (406, fig. 4) for shading the discontinuity edge; means (406, fig. 4, and 708, fig. 7) for sorting the discontinuity edges; and means for overdrawing the discontinuity edges as antialiased lines (as performed by item 402, fig. 4 and fig. 10). Method claim 48 recites limitations that are analogous to the limitations of claim 74. As the limitations of claim 74 have been met by the teaching of Gossett, it is apparent that the applied prior art perform the underlying functions. As such, the limitations recited in claim 48 are rejected under the same rationale set forth for claim 74. It is noted that the sharp edges correspond to the aliasing effects shown at the silhouettes edges of the

objects, and/or the zigzag representation, which too also defines the discontinuity edges. And, since the steps are processed before the antialiased image is presented to video display 412 for review, the aforementioned steps must be performed prior or during processing time.

Claim 49 is rejected for the same reason as claim 32.

Claim 50 is rejected for the same reason as claim 38.

Claim 52 is rejected for the same reason as claim 41.

Allowable Subject Matter

7. Claim 51 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, because the prior art fail to suggest shading. comprises applying blending processes that balance temporal smoothness, and spatial sharpness.

Conclusion

Any response to this action should be mailed to:

Box
Commissioner of Patents and Trademarks
Washington, DC 20231

or faxed to:

(703) 872-9314, (for technology center 26000 only)

Or:

(703) 308-5359 for informal or draft communications, please label "PROPOSED"

or DRAFT")

Hand-held delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, 6th floor (receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wesner Sajous whose telephone number is (703) 308-5857. The examiner can be reached on Mondays thru Thursdays and on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Supervisor, Matthew Bella, can be reached at (703) 308-6829. The fax phone number for this group is (703) 308-6606.

Wesner Sajous

9/27/03

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